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THE
MARYLAND STATE COLLEGE OF AGRICULTURE
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No. 76 MAY 1917

Feed Stuff Analyses

LICENSED BRANDS OF AGRICULTURAL LIME

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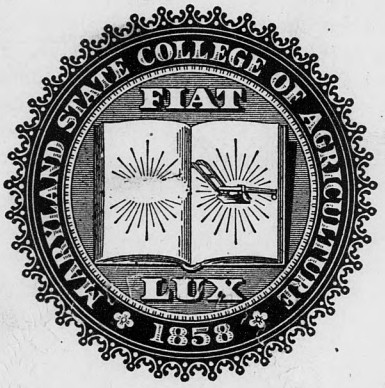

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ADDRESS CHEMICAL DEPARTMENT
MARYLAND STATE COLLEGE OF AGRICULTURE
COLLEGE PARK, MD.

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#76

ANALYSES OF

Feeds Sold in Maryland

BY THE CHEMICAL DEPARTMENT OF

The Maryland State College of Agriculture

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This bulletin contains the results of analysis of samples feeding stuffs obtained from June, 1916, to May, 1917, inclusive. The work has been mostly limited to "concentrated feeding stuffs," as defined in the feed law. The examination of wheat bran, middlings, corn meal and similar feeds has been limited, as a rule, to a microscopic examination for adulterants and have been found practically free from adulteration and are not listed herein.

The feeds herein are, as a rule, by-products from some industry, as the manufacture of oils, alcohol, whiskey, beer, breakfast foods, etc., or mixtures of several of them with some refuse molasses. The latter has feeding value, is liked by the animal and prevents the separation of fine and heavy ingredients from the lighter bulky material of the mixture.

FEED ANALYSIS.

A complete analysis of a feed separates it into its constitutional parts, or groups of constituents having similar properties. The usual constituents are water, ash, protein, fat, fiber and nitrogen-free extract.

WATER is present in all feeds and is an important article of commerce in this way. Old grain, called "dry," will contain about 10 percent, while new grain will contain more. If the amount is over 14 or 15 percent the grain or feed is very liable to mold and ferment. Fresh fruits and vegetables, as cabbage, turnips, etc., frequently contain over 90 percent of water. The water content of feed will change on storage, the amount of change depending on the condition at the start, method of storing, temperature and

humidity of the air, etc. If the feed has been kiln-dried, as with dried brewer's or distiller's grains, molasses feed, etc., gain in weight is common. This would be indicated if the packages weigh more than the guaranteed weight and, in that case, a corresponding decrease in the percent of the other constituents should be expected. On the other hand, should the material lose moisture, a corresponding increase in the percent of the other constituents (but not in the actual amount) occurs.

The changes in moisture content are very important in connection with sampling and analysis and the proper care of samples for analysis—points which are liable to be entirely overlooked by those who have not been instructed in such matters.

ASH, as its name indicates, is the part of the feed which remains after burning. It is the mineral part, which has its origin in the minerals of the earth (soil). All other parts of the feed have their origin, either directly or indirectly, from the air.

PROTEIN, or crude protein, is the nitrogenous part, calculated from the nitrogen by multiplying it by 6.25. It includes albumens and other nitrogenous bodies not so valuable as food. Protein is essential for the formation of flesh, nerves, hair, feathers, etc., in fact nearly all tissues of the animal body, except fat, and it may serve to form fat.

FAT, or "crude fat," is the ether extract obtained by treating the dry substance with ether. In the case of grains, seeds, nuts and flesh it is nearly pure fat and oil, but with hay, grasses and coarse fodders it contains considerable amounts of wax, gum, etc. It is often a valuable constituent of feed, is the most concentrated form of energy, and serves to build fat in the animal when in excess of its immediate requirements. Large amounts of fat are not tolerated by farm animals, as a rule.

FIBER, or "crude fiber," is the fibrous, woody part, not soluble in ether, dilute acid or alkali. It is largely indigestible, but serves to give the ration proper bulk. The digestibility varies with the nature of the fiber and the kind of animal. The amount of fiber is small in flesh, cereal grains and nuts, but large in stems, stalks, hays, straws, fodders, husks, hulls, cobs, etc., and its amount, as shown by analysis, indicates the presence of such materials.

NITROGEN-FREE EXTRACT, sometimes called "carbohydrates," or "soluble carbohydrates" (thereby excluding the fiber, which is an insoluble carbohydrate), is obtained by finding the amounts of the constituents enumerated above and substracting this sum from 100 percent. It includes starch, sugars, pentosans, etc., which may be determined separately.

For inspection purposes it is generally sufficient to determine the amount of protein, fat and fiber, as this will indicate if the feed has been adulterated with inferior coarse material, such as hulls, straws, cobs, etc., as such substances are low in protein and fat but high in fiber.

A table of well-known and standard feed materials with several coarse materials is given on page 12, showing the approximate average composition for comparison with the feeds shown on the market as indicated in the following table (Pages 4-11). The analyses are given in percentage, or pounds in a hundred.

No.	Name of Manufacturer and Feeding Stuffs	Place of Sampling	Protein.		Fat or Ether Extract.		Crude Fiber.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
	Ajax Milling & Feed Co. New York, N.Y.							
29544	Ajax Flakes	Baltimore	33.96	30.00	14.94	10.00	12.93	14.00
	Akron Feed & Milling Co. Akron, Ohio.							
29503	Portage Stock Feed	Cumberland	9.56	10.00	5.02	4.00	11.46	10.00
	Alfocorn Milling Co., East. St. Louis, Ill.							
29579	King Cotton Horse & Mule Feed	Baltimore	9.39	9.00	4.39	1.50	12 52	15.00
29499	Leader Horse & Mule Feed	Baltimore	11.85	9.00	2 95	1.50	12.75	15.00
	American Agricultural Chemical Co., New York, N.Y.							
29496	Pure Ground Meat Scraps	Baltimore	53.88	55.00	11.95	10.00	2.89	.....
	American Maize-Products Co., New York, N. Y.							
29527	Cream of Corn Gluten Feed	Salisbury	22.03	24.00	2.01	1.50	7.38	8.00
	American Milling Co., Peoria, Ill.							
29528	Amco Dairy Feed	Salisbury	24.22	25.00	9.14	8.00	14.32	14.00
29621	Amco Fat Maker	.....	11.50	10.00	5.13	3.50	11.07	12.00
29522	Amco Old Process Linseed Meal	Baltimore	30.19	30.00	6.87	5.00	9 04	10.00
29512	Empire State Dairy Feed	Graceham	32.38	30.00	9.68	10.00	12.45	.....
29589	Sucrene Dairy Feed	Ellicott City.	18.43	16.50	8.07	3.50	12 18	14.00
29529	Sucrene Calf Meal	Salisbury	19.92	20.00	4.05	4.00	3.34	3.00
29622	Sucrene Horse Feed with Alfalfa	.....	11.32	10.00	3.95	2.50	11.50	12 00
29639	Sucrene Horse & Mule Feed	.....	13.60	9.00	4.33	2.50	16 01	12.00
29624	Tip Top Horse Feed with Alfalfa	.....	11.67	10 00	4.25	2.50	15.02	12.00
29623	Tip Top Sugared Feed	.....	15.71	12.00	8.10	2.50	12.67	14.00
	E. Armacost, Baltimore Md.							
29530	O. C. Horse Feed	Easton	10.09	10.00	4.63	4.00	6.02	5.00
	Armour Fertilizer Works, Inc., Chicago, Ill.							
29602	Meat Meal	Baltimore	55.53	60.00	9.80	6.00	2.40	2 00
	Atlantic Export Co., New York, N.Y.							
29535	Dried Brewer's Grains	Fallston	26.85	25.00	6.04	6.00	14.05	14.00

	Atlas Feed & Milling Co., Peoria, Ill							
29613	Corn Oil Meal	.....	19.39	18.00	14.68	7.00	3.60	9.00
29614	Distiller's Dried Grains	.....	28.70	30.00	7.28	10.00	14.10	14.00
	Baltimore Pearl Hominy Co., Baltimore, Md.							
29611	Spring Garden Corn Oil Meal	Baltimore	18.16	12.00	7.57	6.00	4.40	6.00
39489	Spring Garden Dairy Feed	Baltimore	15.45	13.00	4.25	6 00	4.51	6.00
29488	Spring Garden Horse Feed	Baltimore	11.58	10.00	6.61	7.00	5.37	5.00
29541	Spring Garden Stock Feed	Baltimore	11.32	10.00	5.82	6.00	7.97	6.00
	Baugh & Sons Co., Baltimore, Md.							
29500	Meat Meal for Poultry	Baltimore	47.20	50.00	17.29	14.00	1.87	1.00
	Fred. Bauernschmidt Baltimore, Md.							
29470	Dried Brewer's Grains	Baltimore	25.45	26.00	7.25	5.00	12.91	.....
	Berg Company, Philadelphia, Pa.							
29587	3 Medal Poultry Meat	Hyattsville	36.77	40.00	12.21	11.00	2.44	1.00
	Blamberg Bros.. Inc, Baltimore, Md.							
29559	Cornell Brand Dry Mash	Baltimore	18.43	20.00	4.36	4.00	7.77	9.00
29519	Cornell Brand Beef Scraps for Poultry	Baltimore	48.78	50.00	11.98	14.00	1.67	2.00
	Blatchford Calf Meal Factory, Waukegan, Ill.							
29560	Calf Meal	Baltimore	22.73	24.00	7.25	5.00	7 17	6.75
29561	Egg Mash	Baltimore	19.48	19.00	4.10	4.00	9.02	10.00
	J. Bolgiano & Sons, Baltimore, Md.							
29612	Meat & Bone Scraps	Baltimore	43 44	45.00	12.40	10.00	.80	2.00
29516	Square Deal Beef Scraps	Baltimore	44.93	50.00	13.52	10.00	1.09	1.00
29580	Square Deal Poultry Food	Baltimore	9.92	11.50	4.14	3.87	2 82	2.70
	Buckeye Cotton Oil Co., Cincinnati, Ohio							
29604	Prime Cotton Seed Meal	.....	35.36	36.00	6.45	.....	14.65	.....
	Canton Corn Products Co., Baltimore, Md.							
29615	Dried Corn Grains	.....	32.38	32.00	12.20	11.00	13.10	14.00
	Chapin & Co., Chicago, Ill.							
29637	Acorn Dairy Ration	.....	27.20	26 00	6.03	5 50	8.62	11.00
29638	Lactola Dairy Feed	.....	19.13	16.50	6.14	3.00	10.10	12.00
29513	Unicorn Dairy Ration	Gaithersburg	28.78	26.00	7.82	5.50	10.88	10.00
	Clinton Sugar Refining Co., Clinton, Iowa							
29545	Corn Gluten Feed	Baltimore	26.24	23.00	3.56	3.00	7.97	8.00
	Clover Leaf Milling Co., Buffalo, N. Y.							
29504	Dairy Feed	Cumberland	16.58	16.50	5.68	3.50	12.10	12.00
	Corn Products Refining Co., New York, N. Y.							
29625	Corn Gluten Feed	.....	27.73	23.00	1 80	1.00	7.10	8.50
29626	Gluten Meal	.....	44.67	40.00	1.01	1.50	1.07	4.00

No.	Name of Manufacturer and Feeding Stuffs.	Place of Sampling.	Protein.		Fat or Ether Extract.		Crude Fiber.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
	Corn Products Refining Co., New York, N. Y. (Cont.)							
29644	Diamond Hog Feed	Alesia	21.06	18.00	7.70	7.00	9.57	13.00
29627	Oil Cake		25.71	20.00	7.68	9.00	8.02	10.00
	Consolidated Dressed Beef Co., Philadelphia, Pa.							
29551	Beef Scraps	Stockton	47.20	50 00	13.91	12.00	1.24	2.00
	Dairy Food Co., Cockeysville, Md.							
29537	Sherwood Grains	Fallston	17.46	19.91	6.71	1.69	14.72	.....
	S. P. Davis, Little Rock, Ark.							
29595	Beauty Brand Cotton Seed Meal	Colora	36.24	36.00	6.03	6.00	13.29	12.00
	Jacob Dold Packing Co., Buffalo, N. Y.							
29605	Quality Meat & Bone Scraps		54.32	45.00	8.08	8 00	1.47	5.00
	Douglas Co., Cedar Rapids, Iowa.							
29569	Corn Gluten Feed	Baltimore	24.45	23.00	2 10	1.00	7.63	8.00
	Early & Daniel Co., Cincinnati, Ohio.							
29474	Ben Hur Horse & Mule Feed	Baltimore	9 92	10.00	3.98	2.00	13.39	15.00
29549	Tuxedo Chop	Baltimore	12 02	11.00	4.30	3.00	10.41	10.00
	Eastern Cotton Oil Co., Hertford, N. C.							
29556	Cotton Seed Meal	Westminister	32.64	36.00	7.96	6.00	12 21	10.00
29557	Cotton Seed Meal	New Windsor	32.12	36.00	6 83	6.00	15.95	10.00
	John W. Eshelman, Lancaster, Pa.							
29475	Laying Mash	Baltimore	21.50	20.00	6.33	5.00	5.63	7.00
	Fairplay Feed Mills, Linton, Ind.							
29505	Winner Chop	Friendsville	8.60	7.00	2.36	3.00	10.51	7.00
	Farmers Feed Co., New York, N. Y.							
29555	Bull Brand Dried Brewer's Grains	Baltimore	30.89	27.20	6.32	6.30	12.72	12.85
	Feeders Supply Co., Kansas City, Mo.							
29572	Equity Br. Cotton Seed Meal & Cake	Baltimore	44.06	38.62	6.96	5.00	9.73	12.00
	Ferger Grain Co., Cincinnati, Ohio							
29534	Dried Distiller's Grains	Aberdeen	27.55	31.00	9.85	12.00	11.20	.....

	Frederick County Farmers Exchange, Frederick, Md.							
29640	Gambrill Dairy Feed	Adamstown	16.32	14.50	5.65	5.00	10.67	12.00
29641	Hampton Dairy Feed	Adamstown	15.36	16.00	6.10	5.50	15.87	16.00
	J. M. Frisch & Co., Baltimore, Md.							
29531	Cotton Seed Meal	Salisbury	38.44	.....	11.18	.....	9.32	.....
29482	Prime Cotton Seed Meal	Baltimore	40.19	38.62	6.83	6.00	9.05	9.00
29483	Pure Old Process Oil Meal	Baltimore	33.26	30.00	8.14	5.00	7.61	7.00
29562	Old Process Linseed Meal	Baltimore	30.27	30 00	6.88	5.00	8.83	10.00
	Fritz Co., Philadelphia, Pa.							
29596	Quaker City Quality Gr. Meat & Bone Scraps	Elkton	50.03	50.00	13.30	10.00	1.15	2.00
29603	Spec. Brand Meat & Bone Scraps	.....	51.03	40.00	16 28	10.00	.77	2.00
	C. A. Gambrill Mfg. Co., Baltimore, Md.							
29542	Horse Feed	Leonardtown	9.74	11.75	4.28	4.60	4.56	7.50
	Golden Grain Milling Co., East St. Louis, Ill.							
29520	Horse and Mule Feed	Baltimore	10.35	10.00	2.93	2.00	11.80	12.00
29494	Puritan Horse & Mule Feed	Baltimore	9.65	9.00	1.62	1.50	20 18	14 00
	Goldsboro Pure Feed Co., Etter's Pa.							
29514	June Bug Dairy Feed	Ladiesburg	16.85	18.00	4.32	4.00	12.49	12.00
	Hales & Edwards Co., Chicago, Ill.							
29573	Harvest Horse Feed	Baltimore	11.41	10.00	2.53	2 00	12.51	15.00
29574	Red Horn Dairy Feed	Baltimore	26.24	25.00	3.40	4.00	11.06	15.00
	Howard H. Hanks Co., Chicago, Ill.							
29575	Golden Egg Fine Chop	Baltimore	10.03	10.00	2.94	2.00	1.97	5.00
29581	Kingfalfa Horse Feed	Baltimore	10.97	8.00	3.38	2.00	13.90	15.00
29490	Kingfalfa Meadow Feed	Baltimore	13.34	10.00	1.87	5.00	17.51	25.00
	Geo. L. Harding, Binghamton, N. Y.							
29477	Uncle Sam Granulated Milk for Poultry	Baltimore	50.55	40.00	2.78	5.00	.32	.....
29590	Uncle Sam Granulated Milk for Poultry	Ellicott City	43.79	40 00	4.70	6.00	.....	.....
	Hen-E-Ta Bone Co., Newark, N. J.							
29578	Hen-O-la Dry Mash	Baltimore	12.90	12.00	2.83	3.00	4.39	4.00
	W. S. Hoge & Bro., Washington, D. C.							
29585	Milk Maker Dairy Feed	Annapolis	13.43	13.50	4.52	4.00	12.09	15.00
	Hottelet & Co., Milwaukee, Wis.							
29480	Holstein Dried Brewer's Grains	Baltimore	22.90	20.00	6.47	5.00	15.76	14.00
	Humphreys Godwin Co., Memphis, Tenn.							
29558	Cotton Seed Meal	New Windsor	38.96	38.55	6.55	6.00	13.34	8.00
	Illinois Feed Mills Co., St. Louis, Mo.							
29526	Peck's Mule Feed with Molasses	Baltimore	11.41	9.00	3.55	1.50	12.83	12.00

No.	Name of Manufacturer and Feeding Stuffs.	Place of Sampling.	Protein.		Fat or Ether Extract.		Crude Fiber.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
	International Sugar Feed Co., Minneapolis, Minn.							
29484	Climax Dairy Feed	Baltimore	12.37	12.50	5.49	4.00	15.48	12.00
29563	Climax Dairy Feed	Baltimore	13.43	12.00	6.85	4.00	13.09	12.00
29564	Special Dairy Feed	Baltimore	15.01	15.00	7.16	4.50	13.53	12.00
	Chas. A. Krause Milling Co., Milwaukee, Wis.							
29553	Badger Horse Feed	Crisfield	10.62	10.00	3.04	2.00	12.48	12.00
29616	Blue Top Dairy Feed	Perryman	13.69	13 00	5.65	2.00	14 67	15.00
29576	Cream City Horse Feed	Baltimore	10.88	10.00	2.28	1.50	13.65	14.00
29552	Dairy Feed	Crisfield	23.25	24.00	5.59	5 00	12 83	10.00
29597	Pul-Mor Horse Feed	Elkton	11.06	9.00	2.18	1.00	16.47	16.00
	Lake Erie Milling Co., Toledo, Ohio.							
29498	Molett's Park City Stock Feed	Berwyn	9.04	8.00	3.36	3.50	7.76	9.00
	Lake Shore Elevator Co., Cleveland, Ohio.							
29485	Dairy Feed	Baltimore	12.37	17.00	5.79	3.00	13.97	14.00
29486	Hart's Special Dairy Feed	Baltimore	14.22	24.00	4.82	4.50	15.47	9.00
	Larrowe Milling Co., Detroit, Mich.							
29491	Brownie Grains	Baltimore	32.47	26.00	10.36	7.00	11.93	9.00
29570	Dried Beet Pulp	Baltimore	8.95	8.00	1.02	.50	18.95	20.00
29506	Larro Feed	Cumberland	19.04	20.00	3.67	3.00	12.42	14.00
	Memphis Cotton Hull & Fiber Co., Memphis, Tenn.							
29642	Cyclone Cotton Feed	Wash. Grove	20.62	20.00	3.58	3.00	25.17	23.00
	Meridian Grain & Elevator Co., Meridian, Miss.							
29633	Tip Top Choice Cottonseed Meal		42.03	41.00	6.15	6.50	10.77	10.00
29634	Tip Top Good Cottonseed Meal		36.94	36.00	7.90	5.00	12.30	15.00
29582	Tip Top Prime Cottonseed Meal	Baltimore	35.72	38.62	7.17	6.50	13.40	10.00
	Joel Moores & Co., Baltimore, Md.							
29550	Ground Beef Cracklings	Baltimore	62.82	50.00	13.37	12.00	3.36	.....
	National Oats Co., St. Louis, Mo.							
29501	Sweet Molasses Feed	Baltimore	11.06	8.50	2.72	2.50	14.86	12.00

	Ninety Six Oil Mill, Ninety Six, S. C.							
29497	Oil Meal	Hyattsville	38.44	38.62	6.83	6.00	11.78	10.00
	Northw'n Consolidated Mill. Co., Minneapolis, Minn.							
29606	Wheat Mixed Feed		16.50	15.00	4.95	4.50	8.27	10.00
	W. C. Northern, Little Rock, Ark.							
29540	Butterfly Brand Cottonseed Meal Cake	Baltimore	39.14	39.00	7.27	6.00	9.39	8.00
	Oatfalfa Mill Co., Philadelphia, Pa.							
29577	Como Horse Feed	Baltimore	9.83	9.00	2.52	2.00	13.66	12.00
	G. Ober & Sons Co., Baltimore, Md.							
29479	Royal Crown Beef Meat for Poultry	Baltimore	59.85	50.00	13.84	12.00	.80	1.00
	Omaha Alfalfa Milling Co., Omaha, Neb.							
29628	Alfalfa Meal		14.39	12 00	1.55	1.00	29.02	30.00
29629	Cream Alfalfa Dairy Feed No. 1		16.94	20.00	2.93	3.00	17.30	18 00
29630	Cream Alfalfa Dairy Feed No. 2		16.50	16.00	4.78	2.50	14.62	18.00
29631	Green Meadow Dairy Feed		13.02	11.00	1.40	1.00	20.70	25.00
29632	Perfection Horse Feed		11.50	10.00	2.78	2.00	10.47	12.00
29565	Peerless Alfalmo Horse Feed	Baltimore	11.58	10.00	3.14	2.00	8.69	12.00
29583	Special Horse & Mule Feed	Baltimore	11.58	10.00	2.25	2.00	11.88	12.00
	Park & Pollard Co., Boston, Mass.							
29567	Dried Mash Chicken Feed	Baltimore.	18.60	18.00	3.96	1.50	10.21	12.00
29617	Growing Feed		16.06	10.00	3.60	1.50	5.00	8.00
29546	Lay or Bust Dry Mash	Baltimore	20.55	18.00	2.72	1.50	7.81	12.00
29618	Stevens Dairy Ration		25.18	24.00	6.68	5.00	11.35	14.00
	G. E. Patteson & Co., Memphis, Tenn.							
29478	Novo Dairy Feed	Baltimore	15.71	16.50	3.85	2.50	19.46	17.00
	M. C. Peters Mill Co., Omaha, Neb.							
29507	Arab Horse Feed	Cumberland	12.02	9.00	2.52	2.00	11.19	15.00
29619	King Corn Horse & Mule Feed		12.64	10.00	2.35	1.50	15.07	18.00
29584	Lucern Alfalfa Meal	Baltimore	14.83	12.00	1.36	.50	31.43	33.00
29508	Re-Peter Horse Feed	Cumberland	12.20	9.00	2.02	1.50	11.72	18.00
29620	Rabbit Mule Feed		11.58	10.00	3.08	1.50	13.20	18.00
	Chas. Pope, Chicago, Ill.							
29495	Dried Beet Pulp	Baltimore	9.04	8.00	1.32	.50	18.21	20.00
	Quaker City Mfg. Co., Philadelphia, Pa.							
29538	Quality Meat & Bone Scraps	Federalsburg	57.04	50.00	12.88	10.00	1.90	2.00
29539	Special Meat & Bone Scraps	Federalsburg	56.34	40.00	13.26	10.00	1.80	2 00
	Quaker Oats Co., Chicago, Ill.							
29591	Dairy Feed with Molasses	Annapolis	17.29	16.00	6.65	4.00	14.95	14.50
29509	Green Cross Horse Mixed Feed	Cumberland	10.35	10.00	2.54	2.50	13.52	12.00

No.	Name of Manufacturer and Feeding Stuffs.	Place of Sampling.	Protein.		Fat or Ether Extract		Crude Fiber.	
			FOUND.	Guaranteed.	FOUND.	Guaranteed.	FOUND.	Guaranteed.
	Quaker Oats Co., Chicago, Ill. (Continued)							
29523	Schumacher Calf Meal	Baltimore	19.13	18.00	7.85	8.00	3.70	4.00
29586	Schumacher F. S. Feed	Annapolis	11.14	10.00	3.57	3.25	11.02	10.00
29510	White Diamond Feed	Cumberland	9.04	8.00	2.68	3.25	8.33	9.00
	Ralston Purina Co., St. Louis, Mo.							
29547	Purina Chicken Chowder	Baltimore	19.39	19.00	4.16	4.00	6.84	9.00
29571	Purina Sweet Feed	Baltimore	9.04	9.00	1.82	1.00	25.92	18.00
29502	Protena Dairy Feed	Baltimore	17.11	16.50	3.91	3.50	9.96	12.00
29517	Protena Horse Feed	Baltimore	13.08	9.00	3.02	1.50	11.80	12.00
	Rindollar Bros. & Co., Taneytown, Md.							
29648	Rein-O-La-Chick Feed	Taneytown	9.04	9.00	3.25	3.00	1.92	3.00
29649	Rein-O-La-Poultry Mash	Taneytown	12.02	12.00	2.93	3.00	3.95	6.00
29650	Rein-O-La-Scratch Feed	Taneytown	8.51	9.00	3.08	2.00	2.75	3.00
	Wm. G. Scarlett & Co., Baltimore, Md.							
29548	Oriole Brand H. G. Beef Scraps	Baltimore	51.42	50.00	11.62	12.00	2.08	3.00
29521	Oriole Brand H. G. Dry Mash	Baltimore	20.09	20.00	5.55	4.00	7.69	8.00
	C. S. Schermerhorn & Son, Baltimore, Md.							
29554	Dried Beef Scrap	Preston	63.18	55.00	14.24	12.00	3.64	1.00
29481	Old Process Oil Meal	Baltimore	29.66	31.50	6.15	7.00	9.48	10.00
28524	Prime Cotton Seed Meal	Baltimore	34 22	38.00	6.70	8.00	13.46	12.00
	Spencer Kellogg & Sons, Inc., Buffalo, N. Y.							
29643	Pure Old Process Linseed Oil Meal		36.24	33.00	6.03	5.00	7.80	10.00
	Wm. H. Stellman, Baltimore, Md.							
29525	F. B. Brewer's Dried Grains	Baltimore	23.78	29.06	6.56	6.97	13.89	12.62
	Sugarine Co., Peoria, Ill.							
29566	Calf Meal	Baltimore	19.48	20.00	3.85	4.00	3.42	3.00
29568	Dairy Feed	Baltimore	18.43	16.50	5.98	3.50	11.02	12.00
29532	Horse Feed with Alfalfa	Salisbury	10.71	10.00	3.65	2.50	11.42	12.00
29533	Ideal Alfalfa Horse Feed	Salisbury	12.81	10.00	3.79	2.50	12.69	12.00

	Swift & Co., Kearny, N. J.							
29543	Digester Tankage	Baltimore	60.02	60.00	7.59	8.00	2.17	3.00
	Thompson & Co., Pittsburgh, Pa.							
29635	Oil Meal as Stock Food		35.89	30.00	5.95	5.50	7.77	11.00
	Ubiko Milling Co., Cincinnati, Ohio.							
29511	Biles Ready Dairy Ration	Cumberland	23.25	24.00	6.73	7.00	9.43	9.00
	Union Seed & Fert. Co., New York, N. Y.							
29607	American Red Tag Cottonseed Meal		41.16	38.62	6.30	6.00	9.22	11.50
29608	Columbia Cottonseed Feed		20.88	20.56	4.05	3.00	22.82	25.00
29609	Security Brand Cottonseed Meal		38.52	36.00	7.03	5.50	10.37	14.00
29610	Surety Brand Cottonseed Meal		38.70	36.00	7.45	5.50	10.55	14.00
	Virginia Feed & Milling Corporation, Alexandria, Va.							
29599	Blue Bell Dairy Feed		25.36	20.00	4.88	3.00	9.12	15.00
29600	Supreme Horse & Mule Feed		15.71	12.00	2.80	3.00	12.22	15.00
29601	Tivoli Brand Alfalfa Meal		14.04	14.00	1.88	1.50	35.50	30.00
	R. C. Wells & Co., Baltimore, Md.							
29492	Prime Cottonseed Meal	Baltimore	35.28	38.62	6.09	6.00	12.93	12.00
29476	Rialto Ground Beef Scraps	Baltimore	59.32	55.00	12.06	10.00	1.28	.....
	Western Grains & Feed Co., Chicago, Ill.							
29471	Dried Brewer's Grains	Baltimore	29.22	25.00	6.53	5.00	13.27	16.00
	Western Grain Products Co., Hammond, Ind.							
29646	Calumet Alfalfa Horse & Mule Feed		10.97	10.00	2.28	2.50	14.12	15.00
29645	Calumet Stock Feed		10.79	10.00	5.65	3.50	8.95	9.00
29515	Hammond Dairy Feed	Gaithersburg	17.11	16.50	5.49	3.50	10.19	12.00
29647	Hammond Scratch Feed		11.41	10.00	2.65	2.50	2.42	5.00
	R. A. Wooldridge Co., Baltimore, Md.							
29536	Beef Scraps for Poultry	Chestertown	62.02	55.00	14.33	10.00	2.75	3.00

Table II. Showing approximate average per cent. (pounds per hundred) of protein, fat and fiber in familiar substances for comparison.

	Water.	Protein.	Fat.	Fiber.
Meat Meal	10	70	12	1
Dried Blood	10	80	3	0
Cotton Seed Meal	8	40	8	8
Linseed Meal	10	35	7	8
Gluten Meal	10	32	6	2
Gluten Feed	10	25	3	7
Corn Germ Oil Meal	9	24	10	8
Malt Sprouts	10	25	2	12
Dried Distillers' Grains (Corn)	9	30	11	11
Dried Distillers' Grains (Rye)	9	20	6	12
Dried Brewers' Grains	9	25	6	11
Wheat Middlings	11	17	5	6
Wheat Bran	11	15	4	9
Corn Bran	9	8	6	13
Corn Cobs	10	2+	0.5	30
Corn	11	10	5	2
Oats	10	12	5	10—
Wheat	10	12	2	2—
Rye	9	11	2	2—
Barley	10	12	2	4
Buckwheat	12	10	2	9—
Cow Peas	13	21	1+	4
Timothy Hay	12	6	2.5	29
Clover Hay	15	12	3	25
Alfalfa Hay	9	14	2	28
Cotton Seed Hulls	10	4	2	47
Oat Straw	10	4	2	37
Wheat Straw	10	3	1+	38
Cabbage	90	2+	0.4	1½
Turnips	90	1	0.2	1
Pumpkins	91	1+	0.4	2
Milk	87	3½	4	0

PRACTICAL USE OF FEEDS.

It is not possible within the scope of this bulletin to go into details in regard to the feeding of various farm animals. Bulletins on this subject are readily available for the asking. We recommend the following Farmers' Bulletins, which may be obtained free by writing to the United States Department of Agriculture, Washington, D. C., or to your Representative or Senator in Congress. In any case they may be obtained for 5 cents per copy from the "Superintendent of Documents, Washington, D. C." Send currency or money order, as stamps are not taken.

No. 22 Feeding of Farm Animals.
49 Sheep Feeding.
170 Principles of Horse Feeding.
205 Pig Management.
322 Milo as a Dry-land Grain Crop.
346 Computation of Rations for Farm Animals by the Use of Energy Values.
355 Successful Poultry and Dairy Farm.
411 Feeding Hogs in the South.
448 Better Grain-sorghum Crops.
528 Hints to Poultry Raisers.
552 Kafir as a Grain Crop.
578 Handling and Feeding of Silage.
580 Beef Production in the South.
588 Economical Cattle Feeding in Corn Belt.
655 Cottonseed Meal for Feeding Beef Cattle.
686 Uses of Sorghum Grain.
724 Feeding of Grain Sorghums to Live Stock.
743 The Feeding of Dairy Cows.

LIME BUYERS' GUIDE

BRANDS OF AGRICULTURAL LIME LICENSED FOR SALE IN MARYLAND FOR THE YEAR 1917.

NOTE.—It was contemplated to publish the prices of these limes per ton in carload lots at the places of manufacture, but due to the uncertainty of the price of coal, labor and explosives the manufacturers refused to quote prices, except for immediate acceptance. Write for prices and freight rates to your station.

	Guaranteed Analysis	
	Lime CaO	Magnesia MgO
S. W. Barrick & Sons, Woodsboro, Md.		
High-Grade Agricultural Lime	85	
Hydrated Lime	52	
Beaver Dam Marble Co., Cockeysville, Md.		
Agricultural Limestone	30	20
Blair Limestone Co., Martinsburg, W. Va.		
Martinsburg Granulated Lime	80	
Opequon Hydrated Lime	65	
J. E. Baker Co., York, Pa.		
Empire Lump Lime	80	2
Victor Ground Limestone	47	4
Victor Lump Lime	48	30
Emig Lime Co., Hellam, Pa.		
Agricultural Lump Lime	97.53	.94
William Hyde, Union Bridge, Md.		
Agricultural Lump Lime	95	
Knickerbocker Lime Co., Philadelphia, Pa.		
Ground Lime	50	
Ground Limestone	26	
Hydrated Lime	45	
Run of Kiln Lime	50	
E. J. Lavino & Co., Philadelphia, Pa.		
White Marsh Pulverized Limestone	25	18
Md. State Lime Plant, Popes Creek, Md.		
Ground Oyster Shells	50	
Merion Lime & Stone Co., Norristown, Pa.		
Ground Fresh Lime	50	30
Hydrated Lime	45	30
Run of Kiln Lime	50	30
Natural Lime-Marl Co., Charlestown, W. Va.		
Lime-Marl	50.40	

	Guaranteed Analysis	
	Lime CaO	Magnesia MgO
Palmer Lime & Cement Co., York, Pa.		
Agricultural Lump Lime	90	5
Challenge Hydrated Lime	70	3
Ground Limestone	48.50	5.50
The Potomac Co., Harpers Ferry, W. Va.		
Hydrated Lime	65	
Peerless Oyster Co., Baltimore, Md.		
Ground Oyster Shell Lime	45	
The Powhatan Lime Co., Strasburg Jct., Va.		
Agricultural Lime	95.30	.73
Standard Lime & Stone Co., Buckeystown, Md.		
Agricultural Lump Lime	90	
Ground Agricultural Lime	90	
Ground Limestone	50	
Hydrated Lime	70	
The Salisbury Lime Co., Salisbury, Md.		
Hydrated Oyster Shell Lime	60	1.23
Security Cement & Lime Co., Hagerstown, Md.		
Berkley Ground Lime	90	3
Berkley Hydra-Calcite	20	2
Berkley Hydrated Lime	70	2
Berkley Lump Lime	80	
Berkley Pulverized Limestone	44	
George R. Staub & Son, Linwood, Md.		
Agricultural Lump Lime	85.25	7.48
Steacy & Wilton Co., Wrightsville, Pa.		
Sterling Hydrated Lime	68.20	6.52
Run of Kiln Lime	50	
Tidewater Portland Cement Co., Union Bridge, Md.		
Hydrated Lime	71.76	.50
Lump Lime	92	1
Wm. H. Valliant & Bro., Bellevue, Md.		
Burnt Shell Lime	80	
Ground Oyster Shells	40	
Chas. Warner Co., Philadelphia, Pa.		
Cedar Hollow Limoid	41	28
Pulverized Burned Lime	53	37
Pulverized Limestone	53	42
Run of Kiln Lime	53	37
York Valley Lime Co., York, Pa.		
York Valley Chemical Lime	80	

THE

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